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# MEMO

**To:** Division of Oil, Gas, & Mining  
-Wayne Hedberg  
-Tony Gallegos  
Bureau of Land Management  
-Lynn Jackson  
-Terry McParland  
Division of Water Quality  
-Dennis Fredrick

**From:** Lee "Pat" Gochmour

**Subject:** Additional Reclamation Concerns/Costs - Lisbon Valley Project

**Date:** January 20, 1997 - 15032

Per your request dated 1/16/97, Summo USA Corporation has prepared answers and cost estimates for the final reclamation concerns discussed at your joint agency meeting on 1/15/97. This memo is intended to respond directly to the Items listed in your correspondence. Summo will include these costs in the overall reclamation spreadsheet and submit copies to all of you.

Item 1.

Listed below are the costs to plug 11 monitoring wells. Summo has assumed that the deep wells may also be satisfactory for the pit dewater wells, so no additional wells are included at this time. The wells to be plugged consist of up to 5 process facility wells and 6 down gradient (Navajo) pit wells. The process wells are projected to be drilled to depths of approximately 500 ft. These wells are anticipated to be 4 inches in diameter or less. The 6 down gradient pit wells are projected to be drilled to depths of up to 1200 ft. These wells are anticipated to be at least 6 inches in diameter. The cost estimate provided includes materials and mobilization of a drill rig and water truck.

- Plug 4 inch (process area) monitor wells (5 x 500 ft.) @ \$2.20/ft.	\$ 5,500.00
- Plug 6 inch (Navajo) monitor wells (6 X 1200 ft.) @ \$3.30/ft.	23,760.00

Item 2.

The design closure cover that the agencies are asking for calls for an additional 12 inches of crushed rock to be added to the current design. This results in an additional 410,852 cubic yards of crushed rock.

410,070/CY x \$2.50/CY = \$1,025,175.00

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Item 3 & 4.

The proposed method of handling the residual leach pad rancid is to recirculate water that has been pH adjusted with lime following the freshwater "pre-rinse." At the end of Summo's leaching schedule, approximately 12% of the ore will need to be neutralized. It is estimated that approximately 33,360,000 gallons of rancid water will have to be evaporated. Summo estimates, using the 50 inches of evaporation experienced in the area, that it will take approximately 18 months to evaporate this rancid. By spraying this rancid on the internal portion leach pad and on the exposed pond liners, there is opportunity to improve these evaporation conditions.

Current column testing shows that the leached ore material will require 2.75 pounds/ton of ore. The final 12% of the leach pad to be neutralized equals approximately 5.9 million tons. The estimated cost(s) for this portion of the reclamation is delineated below:

Lime @ 2.5 lbs/ton x \$0.025/lb. x 5,900,000 tons of ore	\$ 405,625
Labor - 4 individuals x 35,000/year x 18 months (1.5 years)	210,000
Power 200 kW x .045/kW x 24 hrs/day x 360 days/year x 1.5 years	116,640
Maintenance (pumps & pipes)	50,000
Management & Reporting	70,000
	<u>\$ 852,265</u>
<b>Total Cost</b>	<b>\$852,625</b>
<b>Tons Rinsed</b> 5,900,000	<b>= \$0.1445/ton of ore</b>

Item 5.

Per instruction from the agencies the bond has been revised to account for the monitoring of a minimum of 11 monitoring wells at a sampling frequency of twice per year.

11 wells X 2 samples/year x 5 years x \$500/sample = \$55,000

Item 6.

Summo agrees to include a statement in the overall reclamation bond calculation that indicates a commitment for testing of residual solids in the process ponds to determine disposal requirements and associated costs for bonding purposes.

This memo addresses all of the items listed on the 1/16/97 correspondence from the above referenced agencies, that was needed to assess costs and requirements for final bonding of the Summo Lisbon Valley Copper Project. If any of you have additional questions, I would like to answer them prior to our Board of Oil, Gas and Mining hearing that is scheduled for 1/22/97.

Attached to this Memo is the revised overall estimate for bonding. I would ask that each of you review the final overall estimate and offer any input (assistance/consideration) for reducing some

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of the contingency on top of contingencies. I anxiously await your return calls.

Thanks,

*Pat G.*

Pat G.

Attachment to follow in approx. 1 hour.